

REMARKS

Claims 1-41 and 52-84 are currently pending in this application. No claims have been added or amended.

Claim Rejections under 35 U.S.C. § 103(a)

Claims 1-41 and 52-84 were rejected under 35 U.S.C. 103(a) as being obvious over various combinations of Chen et al. (U.S. Patent No. 6,648,951) with Deng et al. (U.S. Patent No. 5,397,387), Shastry et al. (U.S. 2004/0021757) and Russell et al. (U.S. Patent No. 6,623,553).

A *prima facie* case of obviousness requires: (1) some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings; (2) a reasonable expectation of success; and (3) the art reference or combination of references must teach all of the claim limitations (MPEP 2142). The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicants' disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991) (MPEP 2143). The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1340 (Fed. Cir. 1990). Applicants respectfully submit that the requirements for a *prima facie* case of obviousness have not been established for each of claims 1-41 and 52-84.

Independent Claim 1

Independent claim 1 was rejected as being obvious over Chen et al. in view of Deng et al. However, the Examiner failed to indicate where motivation to modify or combine the teachings of these references can be found. One of skill in the art would not be motivated to combine the teachings of Chen et al. with Deng et al. as they are each directed to inks suited for use in entirely different applications and comprising different categories and types of ingredients.

First, as is evident from the Title and Abstract, Chen et al. discloses inks that are useful in printing receipts at a point of sale. While Chen et al. discloses inks having a low toxicity or being non-toxic, that are fast-drying "because point-of-sale prints will likely be handled

extensively by both clerks and customers”, Chen et al. does not teach, suggest, or even mention food-grade inks. Col. 1, line 60 to col. 2, line 1. In contrast, Deng et al. discloses food-grade inks that “can be used to print by ink-jet printing onto the surfaces of fruits and vegetable items, [...] suitable for such a food-contact use.” Col. 2, line 67 to col. 3 line 5. The Examiner states that “Chen et al. discloses an environmentally friendly ink that is generally safe for use and contact by humans.” Office action, page 3, lines 13-14. However, while “environmentally friendly,” the inks of Chen et al. are distinct from food grade inks, which are limited to approved ingredients and subject to strict government regulation. As Deng et al. specifies, “the printed image must be of food-grade quality, edible and compliant with all applicable regulatory requirements such as those set forth by the U.S. Food and Drug Administration in the Code of Federal Regulations.” Col. 2, lines 19-23. Chen’s formulations are not food-grade inks and would not comply with the regulatory requirements of the U.S. Food and Drug Administration in the Code of Federal Regulations. Therefore, one skilled in the art would have no motivation to combine these references. Neither reference provides any motivation to combine Deng’s food-grade inks for printing on fruits and vegetables, with Chen et al.’s fast-drying inks of limited toxicity for printing sales receipts.

Second, one of skill in the art would not be motivated to combine the teachings of Deng et al. with Chen et al. because the ink compositions of Deng et al. and Chen et al. are completely different. Chen et al. includes drying agents such as 1,2-hexanediol or 1,2-pentanediol, and emphasize that “even inks that may otherwise be considered fast drying or waterfast may not be fast enough for POS [point of sale] applications” (col. 1, lines 46-48), and that “the ink-jet ink should dry nearly instantaneously.” Col. 1, lines 46-48 and line 66, respectively. In contrast, Deng et al. does not mention that a fast drying ink is a desirable property at all, but rather focuses on the stability of the ink: “[t]he appearance of the printed image must not bleed, disappear fade or transfer to other fruit placed in contact therewith, under any of the conditions and environmental changes that fruit may encounter.” Col. 2, lines 2-6. In contrast to the inks of Chen et al., Deng et al.’s inks contain binders such as shellacs, cellulose derivatives or “wood rosin resins [which] provide exceptional adhesion of the ink to the surface of citrus fruits.” Col. 3, lines 19-22 and 32-36. Neither reference provides any motivation to combine their teachings of inks having distinctly different compositions.

In addition, one of skill in the art also would not have a reasonable expectation that Chen et al.'s inks for printing sales receipts would be successfully combined with Deng's food-grade inks. This is particularly true in view of Chen et al.'s requirement that the ink should dry "nearly instantaneously," whereas Deng et al.'s inks comprise a sticky shellac, roisin or cellulose derivative binder. Absent a motivation to combine the reference teachings, one of skill in the art would not reasonably expect the combination to succeed.

Accordingly, a *prima facie* case of obviousness has not been established for claim 1. Allowance of claim 1 is respectfully requested.

Dependent Claims 2-14 and 52-54

Claims 2-8 and 10-14 were rejected under 35 U.S.C. § 103(a) as being obvious over Chen et al. in view of Deng et al. Claims 9 and 52-54 were rejected as being obvious over Chen et al. in view of Deng et al. and Russell et al.

Claims 2-14 and 52-54 depend from allowable claim 1, and are therefore are allowable. The same and similar reasons that a *prima facie* case of obviousness has not been established for claim 1, namely, no motivation to combine and no reasonable expectation of success, apply to claim 1's dependent claims. Claims 3, 9, 12 and 13 are also patentable for reasons discussed below. Clarification regarding the rejection of claim 14 is requested. In addition, claims 2-14 and 52-54 may contain additional subject matter patentable for reasons not set forth herein.

Claim 3

Claim 3 was rejected as being obvious over the combination of Chen et al. and Deng et al.

Claim 3 recites a colored fluid comprising at least about 70 wt. % 1,2 propanediol. However, Chen et al. and Deng et al., taken alone or in combination, do not teach or suggest at least about 70 wt. % 1,2 propanediol. Deng et al. discloses the use of propylene glycol (1,2-propanediol), but "in an amount from about 0.5% to about 4% by weight of the ink composition, with an amount of from about 1.0 to about 2.0 % being preferred." Col. 5, lines 22-25. Chen et al. distinguishes between propanediol, which, from its use in Example 1, appears to refer to 1,3-propanediol and is categorized as a first humectant, and 1,2-propanediol (referred to as propylene glycol), which is categorized as a second humectant and limited to amounts of no more than 25%. Col. 2, lines 17-23. Chen et al. specifies that "[t]he reason these [second humectants] are

limited to 25% is because these substances are regulated by European Union as hazardous above this amount.” Chen et al. discloses only one example of an ink comprising 1,3-propanediol (present at only 5% of the total composition) (example 1, col. 1, line 66 to col. 2 line 4) and none at all comprising 1,2-propanediol. Therefore, Chen et al. actually teaches away from using 1,2-propanediol in amounts exceeding 25 %. Neither Chen et al. nor Deng et al. teaches or suggests a colored fluid comprising at least about 70 wt. % 1,2-propanediol.

Accordingly, a *prima facie* case of obviousness has not been established with respect to claim 3.

Claim 9

Claim 9 was rejected as being obvious over the combination of Chen et al., Deng et al. and Russell et al.

The Examiner has not indicated where any motivation to combine the disparate teachings of Russell et al. with Chen et al. and Deng et al. can be found. In fact, the inks of Russell et al. are completely different from inks disclosed by Chen et al. and Deng et al. Russell et al. discloses aqueous and organic ink formulations. Notably, the aqueous inks comprise “about 70% to about 80% by weight of at least one sweetener”, and the organic inks comprise “about 70% to about 80% by weight of a barrier forming compound.” Col. 3, lines 1-2 and 64-65, respectively. The sweetener can include “glucose, sorbitol, sucrose, dextrose and fructose, as well as artificial sweeteners such as aspartame and saccharin.” Col. 3, lines 10-13. The barrier forming compound can include “shellac/glaze solutions, as well as waxes such as beeswax and carnauba wax.” Col. 4, lines 7-10. Russell et al.’s inks are thus substantially composed of ingredients that are entirely absent or present only in very small amounts in inks of Chen et al. and Deng et al.

Absent motivation to combine the reference teachings, one of skill in the art would also not reasonably expect the combination to succeed, particularly since the compositions of the inks disclosed in each references are so different.

Moreover, even assuming *arguendo* that the references are combinable and that a reasonable expectation of success exists, the references still do not teach or suggest each of the elements of claim 9. The Examiner asserts that “Russell et al. teach that the viscosity of edible ink is about 2,000 to 16,000 cp at 25°C.” Office action, page 4, lines 17-18. The Examiner conceded that “Russell et al. is silent as to the viscosity of the ink at 60°C, however it would be

expected that the ink would have a lower viscosity at the higher temperature.” Office action, page 4, lines 18-20. In short, Applicants respectfully submit that the Examiner has improperly relied on the combination of Chen et al. and Deng et al. as purportedly teaching Applicant’s composition of claim 1, and then even more improperly relied on a third reference, namely, Russell et al., as teaching the claimed viscosity. The viscosity is dictated by the components in the ink composition. Therefore, it is unreasonable for the Examiner to assert that the combination of Chen et al.’s and Deng et al.’s compositions would somehow maintain the viscosity of Russell et al.’s unrelated composition. Again, for reasons set forth above, Russell et al.’s composition is entirely different from Chen et al. and Deng et al.’s compositions. The Examiner has provided absolutely no reason why one skilled in the art would combine Chen et al., Deng et al. and Russell et al. in the first place, let alone why one would expect this combination to maintain Russell et al.’s viscosity. Applicants respectfully submit that the Examiner is using impermissible hindsight in selecting the viscosity measurement from a third reference, without taking into consideration the third reference’s composition in conjunction with the compositions of the first two references.

Accordingly a *prima facie* case of obviousness has not been established for claim 9.

Claims 12 and 13

Claims 12 and 13 were rejected as being obvious over the combination of Chen et al. and Deng et al.

Chen et al. and Deng et al., taken alone or in combination, do not teach or suggest each element of claims 12 or 13. Claim 12 recites that the food-grade dye has an inorganic salt content of no more than about 0.5%. Claim 13 recites that the food-grade dye has a chloride content of no more than about 0.5% and a sulfate ion content of no more than about 0.5%. The Examiner has not shown that either Chen et al. or Deng et al. explicitly teach or suggest these elements. Rather, the Examiner acknowledges that Chen et al. fails to disclose an inorganic salt, and states that “Deng et al. teach optional components may be added to a food marking ink as conductivity agents in an amount from 0.2% to about 2%. .. [e]xamples of such components include ammonium, sodium or potassium salts of organic acids and ammonium chloride.” Office action, page 5, lines 14-17 (emphasis added).

Neither Chen et al. nor Deng et al. teaches or suggests the inks of claim 12 and 13 comprising a food-grade dye having the characteristics recited in claims 12 and 13. While Deng

et al. discloses that salts may be added to the ink compositions as conductivity agents, it does not teach or suggest a food-grade dye containing limited amounts of inorganic salts, or chloride or sulfate ions as recited in claims 12 and 13 respectively.

Accordingly, a *prima facie* case of obviousness has not been established for claims 12 and 13.

Claim 14

The rejection of claim 14 is unclear. The Examiner states that “the viscosity of the edible ink would be expected to have the characteristic recited by the applicant.” Applicants request clarification regarding the reference or “edible ink,” to which the Examiner is referring, and why that ink would be expected to have the characteristics of the colored fluid of claim 14. In any event, claim 14 is allowable for at least the reasons set forth above for claim 1.

Independent Claim 15

The Examiner rejected claim 15 as being obvious over Chen et al. in view of Deng et al. and Russell et al. Applicants respectfully submit that a *prima facie* case of obviousness has not been established with respect to claim 15.

First, for the reasons set forth above for claim 1, there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify or combine the teachings of Chen et al. and Deng et al. Furthermore, as set forth above for claim 9, one of skill in the art also would not be motivated to combine the teachings of Russell et al. with Chen et al. and Deng et al. Moreover, as set forth above for claims 1 and 9, one skilled in the art would not reasonably expect the combination to succeed.

Even assuming *arguendo* that the references are combinable and that a reasonable expectation of success exists, the references still do not teach or suggest each of the elements of claim 15. Claim 15 recites a food grade colored fluid having a viscosity of about 8 to 14 cps at 60°C. The Examiner asserts that “Russell et al. teach that the viscosity of an edible ink is about 2,400 to 3100 cp at 25°C,” and that it would be expected that the viscosity of the ink would be reduced with an increase in temperature. Office action, page 6, lines 7-8. The Examiner has provided no basis for her conclusion that an ink having a viscosity of 2,400 to 3100 cp at 25°C would show a viscosity of 8-14 cps at 60°C. More importantly, however, as set forth above for claim 9, Applicants respectfully submit that the Examiner has improperly relied on the

combination of Chen et al. and Deng et al. as purportedly teaching Applicant's composition of claim 1, and then even more improperly relied on a third reference having an entirely different composition, namely, Russell et al., as teaching the claimed viscosity. There simply is no reason why one of skill in the art would expect a composition resulting from the combination of Chen et al. and Deng et al. to somehow have the viscosity of Russell et al.'s composition.

Accordingly a *prima facie* case has not been established for claim 15. Allowance of claim 15 is respectfully requested.

Independent Claim 16

Independent claim 16 was rejected as being obvious over Chen et al. in view of Deng et al. and Russell et al. The requirements for a *prima facie* case of obviousness have been set forth above. Applicants respectfully submit that a *prima facie* case of obviousness has not been established with respect to claim 16.

First, for the reasons set forth above for claim 1, there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify or combine the teachings of Chen et al. and Deng et al. Furthermore, as set forth above for claim 9, one of skill in the art also would not be motivated to combine the teachings of Russell et al. with Chen et al. and Deng et al. Moreover, as set forth above for claims 1 and 9, one skilled in the art would not reasonably expect the combination to succeed.

Even assuming *arguendo* that the references are combinable and that a reasonable expectation of success exists, the references still do not teach or suggest each of the elements of claim 16. Claim 16 recites a food grade colored fluid having a Brookfield viscosity at 60°C that changes by no more than 2 cps over a shear rate range from about 10 to 45 rpm. The Examiner asserts that "Russell et al. teach that the viscosity of an edible ink is about 2,400 to 3100 cp at 25°C," and that it would be expected that the viscosity of the ink would stay relatively constant based on the recited shear rate. Office action, page 6, lines 7-8 and 11-13. The Examiner has provided no basis for her conclusion that Russell et al.'s inks, having a viscosity of 2,400 to 3100 cp at 25°C, would change by no more than 2 cps over a shear rate range from about 10 to 45 rpm. More importantly, however, as set forth above for claim 9, Applicants respectfully submit that the Examiner has improperly relied on the combination of Chen et al. and Deng et al. as purportedly teaching Applicant's composition of claim 1, and then even more improperly relied

on a third reference having an entirely different composition, namely, Russell et al., as teaching the claimed viscosity. There simply is no reason why one of skilled in the art would expect a composition resulting from the combination of Chen et al. and Deng et al. to somehow have the viscosity of Russell et al.'s composition.

Accordingly a *prima facie* case has not been established for claim 16. Allowance of claim 16 is respectfully requested.

Dependent Claims 17-19

Claims 17 and 19 were rejected as being obvious over Chen et al. in view of Deng et al., Russell et al. and Shastry et al. Claim 18 was rejected as being obvious over Chen et al. in view of Deng et al., and Russell et al. Claims 17-19 depend from allowable claim 16, and are therefore are allowable. Claim 17 contains additional patentable subject matter for reasons set forth herein. In addition, claims 17-19 may contain additional subject matter patentable for reasons not set forth herein.

Claim 17

Claim 17 was rejected over the combination of Chen et al., Deng et al., Russell et al. and Shastry et al. The Examiner has not indicated where any motivation to combine the teachings of Shastry et al. with Chen et al., Deng et al. and Russell et al. can be found. The lack of motivation to combine the teachings of Chen et al., Deng et al. and Russell et al. is discussed above for claim 15. Shastry et al. discloses the modification of "an edible with a high polarity water-based glaze or polishing gum." Abstract. Shastry et al. discloses suitable viscosity and surface tension parameters for inks useful in printing on the glaze or polishing gum, and briefly mention inks that comprise "food colors, water, ethanol and propylene glycol." Para 47, lines 17-18. The inks of Shastry et al. are thus different from those of Chen et al., Deng et al. and Russell et al. Therefore, one of skill in the art would not be motivated to combine the four references.

It should also be noted that the Examiner is relying on the combination of four references to support the rejection. The Examiner is reminded that the use of hindsight is impermissible. MPEP § 2141. "To draw on hindsight knowledge of the patented invention, when the prior art does not contain or suggest that knowledge, is to use the invention as a template for its own reconstruction an illogical and inappropriate process by which to determine patentability." *Sensonics, Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1570 (Fed. Cir. 1996). It is inappropriate for

the Examiner to pick and choose from four references without showing some motivation to combine the four. Furthermore, with no motivation to combine the reference teachings one of skill in the art would not reasonably expect that the combination would succeed. Accordingly, a *prima facie* case of obviousness has not been established for claim 17.

Allowance of claims 17-19 is respectfully requested.

Independent Claim 20

Independent claim 20 was rejected being obvious over Chen et al. in view of Deng et al. However, for the reasons set forth above for claim 1, there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify or combine the teachings of Chen et al. and Deng et al. Furthermore, as set forth above for claim 1, one skilled in the art would not reasonably expect the combination to succeed.

Moreover, even assuming *arguendo* that the references are combinable and that a reasonable expectation of success exists, the references still do not teach or suggest each of the elements of claim 20. Claim 20 recites a colored fluid comprising a food-grade dye having an inorganic salt content of no more than about 0.5 wt. %. As discussed above for claims 12 and 13, the Examiner has not shown that either Chen et al. or Deng et al. teach or suggest this element. Rather, the Examiner acknowledges that Chen et al. fails to disclose an inorganic salt, and states that “Deng et al. teach optional components may be added to a food marking ink as conductivity agents in an amount from 0.2% to about 2% [...] Examples of such components include ammonium, sodium or potassium salts of organic acids and ammonium chloride.” Office action, page 5, lines 14-17 (emphasis added). While Deng et al. discloses that salts may be added to the ink compositions as conductivity agents, contrary to the assertion of the Examiner, it does not explicitly teach or suggest a food-grade dye having an inorganic salt content of no more than about 0.5 wt. %, as recited in claim 20. Neither Chen et al. nor Deng et al. explicitly teaches or suggests a food-grade dye having the characteristics recited in claim 20. Accordingly, the Examiner has failed to establish a *prima facie* case of obviousness with respect to claim 20.

Allowance of claim 20 is respectfully requested.

Dependent Claims 21-22

Claim 21 was rejected as being obvious over Chen et al. in view of Deng et al. Claim 22 was rejected as obvious over Chen et al. in view of Deng et al. and Shastry et al. Claims 21 and 22 depend from allowable claim 20, and are therefore are allowable. Claims 21 and 22 are also patentable for reasons discussed below. In addition, claims 21 and 22 may contain additional subject matter patentable for reasons not set forth herein.

Claim 21

Claim 21 was rejected as being obvious over Chen et al. in view of Deng et al. Claim 21 recites a colored fluid comprising at least about 70 wt. % 1,2 propanediol. However, as discussed above for claim 3, neither Chen et al. nor Deng et al., taken alone or in combination, teaches or suggests a colored fluid comprising at least about 70 wt. % 1,2 propanediol.

Accordingly, a *prima facie* case of obviousness has not been established for claim 21.

Allowance of claims 21-22 is respectfully requested.

Claim 22

Claim 22 was rejected as being obvious over Chen et al. in view of Deng et al. and Shastry et al. However, Shastry et al is not combinable with Chen et al. and Deng et al. for the reasons set forth above for claim 17. As noted above, Shastry et al. merely discloses food-grade inks useful in printing on a glaze or polishing gum, and briefly mention inks that comprise “food colors, water, ethanol and propylene glycol.” Para 47, lines 17-18. Shastry et al. is therefore not combinable with Chen et al. and Deng et al. Furthermore, with no motivation to combine the reference teachings one of skill in the art would not reasonably expect that the combination would succeed.

Independent Claim 23

Independent claim 23 was rejected as being obvious over Chen et al. in view of Shastry et al. The Examiner has failed to establish a *prima facie* case of obviousness, by not indicating where motivation to combine the teachings of Chen et al. with Shastry et al. can be found. In fact, the composition of the inks disclosed in Chen et al. and Shastry et al. are different, such that their teachings are not combinable. Shastry et al. merely discloses food-grade inks useful in printing on a glaze or polishing gum, and briefly mention inks that comprise “food colors, water,

ethanol and propylene glycol.” Para 47, lines 17-18. In contrast, Chen et al. discloses inks suitable for printing receipts at a point of sale which include a specific combination of components, but, as the Examiner has conceded, do not include ethanol. Office action, page 7, line 18. For reasons similar to those discussed above for claim 1, one of skill in the art would not be motivated to combine the teachings of Chen et al. with a reference disclosing food-grade inks. Therefore, one of skill in the art would not be motivated to combine the teachings of Chen et al. with Shastry et al. because they are each directed to ink applications that are wholly unrelated, and because the compositions of the inks they each disclose are so different.

One of skill in the art also would not reasonably expect that the references could be successfully combined. Absent motivation to combine the reference teachings one of skill in the art would not reasonably expect the combination to succeed, particularly in view of the differing compositions of the inks taught by each reference.

Accordingly, no *prima facie* case of obviousness has been established for claim 23. Allowance of claim 23 is respectfully requested.

Dependent Claims 24-41

Claims 24-27, 29 and 33 were rejected as being obvious over Chen et al. in view of Shastry et al. Claims 28 and 41 were rejected as being obvious over Chen et al. in view of Shastry et al. and Russell et al. Claims 30 and 31 were rejected as being obvious over Chen et al. in view of Shastry et al., Russell et al. and Deng et al. Claims 32, 34-37 and 39-40 were rejected as being obvious over Chen et al. in view of Deng et al. and Shastry et al.

Claims 24-41 depend from allowable claim 23, and are therefore are allowable. Claims 24, 25, 28 and 39-41 are also patentable for reasons discussed below. The same and similar reasons that a *prima facie* case of obviousness has not been established for claim 23, namely no motivation to combine and no reasonable expectation of success, apply to claim 23’s dependent claims. In addition, claims 24-41 may contain additional subject matter patentable for reasons not set forth herein.

Claims 24-25

Claims 24-25 were rejected under as being obvious over Chen et al. in view of Shastry et al.

Claim 24 recites a colored fluid comprising at least about 40 wt. % 1,2 propanediol. Claim 25 recites a colored fluid comprising at least about 85 wt. % 1,2 propanediol. However, as discussed above for claim 3, Chen et al. teaches away from a colored fluid comprising at least about 40 wt. % 1,2 propanediol or at least about 85% 1,2-propanediol, by stating that amounts above 25% are considered hazardous. Shastry et al. fails to cure the deficiencies of Chen et al., as it does not teach any particular amount of 1,2-propanediol. The references therefore do not teach or suggest each element of claims 24 or 25.

Accordingly a *prima facie* case of obviousness has not been established for claims 24 and 25.

Claim 28

Claim 28 was rejected as being obvious over Chen et al. in view of Shastry et al. and Russell et al. However, Shastry et al. is not combinable with Chen et al. and Russell et al. for the reasons set forth above for claims 9 and 17. There is also no motivation to combine Shastry et al. with Chen et al. or Russell et al., because, as discussed above for claim 23, Shastry et al. mentions inks compatible with a glaze or polishing gum only very broadly. Furthermore, with no motivation to combine the reference teachings, one of skill in the art would not reasonably expect that the combination would succeed.

Accordingly a *prima facie* case of obviousness has not been established for claim 28.

Claim 38

While claim 38 was included in the listing of rejected claims under 35 U.S.C. § 103(a), no specific rejection was made of this claim. Applicants respectfully request clarification as to the status of this claim.

Claims 39-40

Claims 39-40 were rejected as being obvious over Chen et al. in view of Deng et al. and Shastry et al. These references are not combinable, and one of skill in the art would not have a reasonable expectation of success for the reasons set forth above for claim 22.

Even assuming *arguendo* that Chen et al., Deng et al. and Shastry et al. are combinable and that a reasonable expectation of success exists, the references, taken separately or combined, still do not teach or suggest each of the elements of claim 40. Claim 40 recites a colored fluid comprising a natural dye selected from turmeric oleoresin, a cochineal extract, gardenia yellow,

gardenia blue, beet powder or a mixture thereof. Chen et al., Deng et al. and Shastry et al. do not teach or suggest a natural dye selected from turmeric oleoresin, a cochineal extract, gardenia yellow, gardenia blue, beet powder or a mixture thereof. Deng et al. merely suggests the use of a natural dye from a plant or insect. The Examiner has not identified any teaching in any of the references to incorporate a dye recited in claim 40 into a colored fluid.

Accordingly, a *prima facie* case of obviousness has not been established for claims 39-40.

Claim 41

Claim 41 was rejected as being obvious over Chen et al. in view of Deng et al. and Russell et al. These references are not combinable, nor would one of skill in the art have a reasonable expectation of success for the reasons set forth above for claim 9.

Even assuming *arguendo* that the references are combinable and that a reasonable expectation of success exists, the references still do not teach or suggest each of the elements of claim 41. Claim 41 recites a colored fluid having a viscosity of about 8 to 14 cps at 60°C. Chen et al., Deng et al. and Russell et al. taken alone or in combination fail to teach or suggest each element of claim 40. As discussed above for claim 9, none of the cited references teach or suggest the colored fluid recited in claim 40 having a viscosity of about 8 to 14 cps at 60°C. Accordingly, no *prima facie* case of obviousness has been established for claim 41.

Allowance of claims 24-41 is respectfully requested.

Independent Claim 55

Independent claim 55 was rejected as being obvious over Chen et al. in view of Deng et al. and Shastry et al. These references are not combinable for the reasons set forth above for claims 1 and 22. Furthermore, as discussed above for claims 1 and 22, one of skill in the art would not reasonably expect the combination to succeed.

Moreover, even assuming *arguendo* that the references are combinable and that a reasonable expectation of success exists, Chen et al. in view of Deng et al. and Shastry et al., taken separately or combined, still do not teach or suggest each of the elements of claim 55. Claim 55 recites a colored fluid comprising at least about 85 wt. % 1,2-propanediol and a food grade dye having a chloride content (as sodium chloride) of no more than about 1000 ppm and a sulfate content (as sodium sulfate) of no more than about 1000 ppm, the colored fluid having a

viscosity of about 35 to 65 cps at 25°C and a surface tension of about 35 to 50 dynes per cm at 25°C. As discussed above for claims 3 and 25 neither Chen et al., Deng et al. or Shastry et al. teaches or suggests a colored fluid comprising at least about 85 wt. % 1,2-propanediol.

Accordingly, a *prima facie* case of obviousness has not been established for claim 55. Allowance of claim 55 is respectfully requested.

Dependent Claims 56-62

Claims 56-58, 60 and 61 were rejected as being obvious over Chen et al. in view of Deng et al. and Shastry et al. Claims 59 and 62 were rejected as being obvious over Chen et al. in view of Deng et al., Shastry et al. and Russell et al. Claims 56-62 depend from allowable claim 55, and are therefore are allowable. In addition, claims 56-62 may contain additional subject matter patentable for reasons not set forth herein.

Independent Claim 63

Independent claim 63 was rejected over Chen et al. in view of Shastry et al. These references are not combinable for the reasons set forth above for claim 23. Furthermore, as discussed above for claim 23, one of skill in the art would not reasonably expect the combination to succeed.

Moreover, even assuming *arguendo* that the references are combinable and that a reasonable expectation of success exists, the references still do not teach or suggest each of the elements of claim 63. Claim 63 recites a colored fluid comprising at least about 85% 1,2-propanediol and having a viscosity of about 35 to about 65 cps at 25°C. For the reasons set forth above for claim 25, Chen et al. and Shastry et al. do not teach or suggest a colored fluid comprising at least about 85% 1,2-propanediol.

Accordingly, a *prima facie* case of obviousness has not been established for claim 63. Allowance of claim 63 is respectfully requested.

Dependent Claims 64-71

Claims 64 and 69-71 were rejected as being obvious over Chen et al. in view of Deng et al. and Shastry et al. Claims 65, 67 and 68 were rejected as being obvious over Chen et al. in view of Shastry et al. Claim 66 was rejected as being obvious over Chen et al. in view of Shastry et al. and Russell et al.

Claims 64-71 depend from allowable claim 63, and are therefore are allowable. Claims 66, 68 and 69-71 are also patentable for reasons discussed below. In addition, claims 64-71 may contain additional subject matter patentable for reasons not set forth herein.

Claim 66

Claim 66 was rejected for being obvious over Chen et al. in view of Shastry et al. and Russell et al. As discussed above for claims 9 and 15, the inks of Russell et al. are completely different from those of Chen et al. Chen et al., Shastry et al. and Russell et al. are not combinable for the reasons set forth above for claim 17. Furthermore, as discussed above for claims 9, 15 and 17, one of skill in the art would not reasonably expect the combination to succeed.

Moreover, even assuming *arguendo* that the references are combinable and that a reasonable expectation of success exists, the references still do not teach or suggest each of the elements of claim 66. Claim 66 recites a colored fluid having a viscosity of about 8 to 14 cps at 60°C. The Examiner concedes that Chen et al. fails to disclose the recited viscosity. Shastry et al. fails to cure the deficiency of Chen et al. as it does not teach an ink having a viscosity in the range recited by claim 66. The Examiner asserts that “Russell et al. teach that the viscosity of an edible ink is about 2,000 to 16000 cp at 25°C.” Office action, page 10, lines 5-6. However, the inks of Russell et al. are completely distinct from the ink recited in claim 66. Therefore, it is simply not appropriate for the Examiner to apply the viscosity measurements of Russell et al.’s inks to the colored fluid recited in claim 66. Accordingly, a *prima facie* case has not been established for claim 66.

Claim 68

Claim 68 was rejected as being obvious over Chen et al. in view of Shastry et al. Claim 68 recites a colored fluid of claim 63 comprising ducosate sodium. The Examiner asserts that it would have been obvious to include ducosate sodium into the edible ink of claim 68 because “ducosate sodium is a conventional laxative used in food.” Office action, page 10, lines 12-13. The ducosate sodium, however, functions as a surfactant and not as a laxative in claim 68. Applicants respectfully submit that the Examiner has failed to set forth a *prima facie* case of obviousness because she has failed to indicate where motivation to modify the cited reference teachings can be found, why one of skill in the art would have a reasonable expectation of

success that the inks of the cited references could be successfully modified to use ducosate sodium, and where in the art the teaching or suggestion of each element of claim 68 can be found.

Accordingly, a *prima facie* case has not been established for claim 68.

Claims 69-71

Claims 69-71 were rejected as being obvious over Chen et al. in view of Deng et al. and Shastry et al. These references are not combinable for the reasons set forth above for claim 22. Furthermore, as discussed above for claim 22, one of skill in the art would not reasonably expect the combination to succeed.

Moreover, even assuming *arguendo* that the references are combinable and that a reasonable expectation of success exists, the references still do not teach or suggest each of the elements of claims 69-71. Claims 69-71 recite colored fluids comprising food-grade dyes having various chloride and/or sulfate contents. As discussed above for claims 12 and 13, neither Chen et al. nor Deng et al. teaches or suggests a food-grade dye having the characteristics recited in claims 69-71. Shastry et al. fails to cure the deficiencies of Chen et al. and Deng et al. because it fails to teach suggest or even mention food-grade dyes having these characteristics.

Accordingly, a *prima facie* case of obviousness has not been established for claims 69-71.

Allowance of claims 64-71 is respectfully requested.

Independent Claim 72

Independent claim 72 was rejected over Chen et al. in view of Shastry et al. These references are not combinable for the reasons set forth above for claim 23. Furthermore, as discussed above for claim 23, one of skill in the art would not reasonably expect the combination to succeed.

Moreover, even assuming *arguendo* that the references are combinable and that a reasonable expectation of success exists, the references still do not teach or suggest each of the elements of claim 72. Claim 72 recites a colored fluid comprising at least about 85% 1,2-propanediol and having a surface tension of about 20 to 60 dynes per cm 25°C. For the reasons

set forth above for claim 25, Chen et al. and Shastry et al. do not teach or suggest a colored fluid comprising at least about 85% 1,2-propanediol.

Accordingly, a *prima facie* case of obviousness has not been established for claim 72. Allowance of claim 72 is respectfully requested.

Dependent Claims 73-80

Claims 73 and 78-80 were rejected as being obvious over Chen et al. in view of Deng et al. and Shastry et al. Claims 74-77 were rejected as being obvious over Chen et al. in view of Shastry et al. Claims 73-80 depend from allowable claim 72, and are therefore allowable. In addition, claims 73-80 may contain additional subject matter patentable for reasons not set forth herein.

Independent Claim 81

Independent claim 81 was rejected as being obvious over Chen et al. in view of Shastry et al. These references are not combinable for the reasons set forth above for claim 23. Furthermore, as discussed above for claim 23, one of skill in the art would not reasonably expect the combination to succeed.

Moreover, even assuming *arguendo* that the references are combinable and that a reasonable expectation of success exists, the references still do not teach or suggest each of the elements of claim 81. Claim 81 recites an inkjet ink comprising no more than about 5 wt. % water and having a surface tension of about 20 to 60 dynes per cm at 25°C. The Examiner concedes that “Chen et al. does not disclose a water content.” Office action, page 9, line 20. However, the Examiner fails to indicate how Shastry et al. cures the deficiencies of Chen et al. In fact, the inks described in Chen et al. contain from 37-47% water, substantially more than the amount recited in claim 81. See Examples 1-6, col. 6, line 65 to col. 7, line 57. Shastry et al. states that preferred water-based inks “include water in an amount between about 30 and about 95 percent by weight, preferably between about 30 and about 85 percent by weight” (page 3, para. 33) or “include water (typically deionized water) in an amount of about 30 to about 85 percent by weight, preferably about 30 to about 75 percent by weight.” Page 3, para. 34. Shastry et al. fails to cure the deficiencies of Chen et al. because it does not teach or suggest an inkjet ink

of the composition recited in claim 81, or even any inkjet ink, comprising no more than about 5 wt. % water.

Accordingly, a *prima facie* case of obviousness has not been established for claim 81.

Allowance of claim 81 is respectfully requested.

Dependent Claim 82

Claim 82 was rejected as being obvious over Chen et al. in view of Shastry et al. Claim 82 depends from allowable claim 81, and is therefore are allowable. In addition, claim 82 may contain additional subject matter patentable for reasons not set forth herein.

Allowance of claim 82 is respectfully requested.

Independent Claim 83

Independent claim 83 was rejected as being obvious over Chen et al. in view of Shastry et al. These references are not combinable for the reasons set forth above for claim 23. Furthermore, as discussed above for claim 23, one of skill in the art would not reasonably expect the combination to succeed.

Moreover, even assuming *arguendo* that the references are combinable and that a reasonable expectation of success exists, the references still do not teach or suggest each of the elements of claim 83. Claim 83 recites an inkjet ink comprising no more than about 5 wt. % water and having a viscosity of about 8 to 14 cps at 60°C. For the reasons set forth above for claim 81, neither Chen et al. or Shastry et al. teaches or suggests an inkjet ink comprising no more than about 5 wt. % water.

Accordingly, a *prima facie* case of obviousness has not been established for claim 83. Allowance of claim 83 is respectfully requested.

Dependent Claim 84

Claim 84 was rejected as being obvious over Chen et al. in view of Shastry et al. Claim 84 depends from allowable claim 83, and is therefore are allowable. In addition, claim 84 may contain additional subject matter patentable for reasons not set forth herein.

Allowance of claim 84 is respectfully requested.

Double Patenting

Claims 1-6, 9-10, 12, 52 and 54 were provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-15, 17 and 39-40 of copending application 11/149,660 in view of Ogawa et al. Abeyance of this provisional rejections is respectfully requested until a provisional allowance is issued in either the present application or co-pending Application No. 11/149,660, which is assigned to the assignee of the present application.

CONCLUSION

In light of the foregoing, Applicants respectfully request withdrawal of the rejection and allowance of the claims.

The undersigned is available for telephone conference during normal business hours.

Respectfully submitted,



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